

WHAT IS CLAIMED IS:

1. An apparatus for compressing data, comprising:  
a cell site element associated with a base  
transceiver station and operable to receive a  
5 communications flow communicated by a mobile station, the  
cell site element including a route processor (RP) and a  
forwarding path (FP) element, wherein the RP is operable  
to communicate with a proxy element in order to determine  
if an incoming packet is associated with an internet  
10 protocol (IP) such that, in cases where the incoming  
packet is non-IP based, the proxy element performs a  
mapping between a non-IP based protocol associated with  
the incoming packet and an IP protocol in order to  
generate an IP compatible packet to be processed by the  
15 FP element and communicated to a next destination.

2. The apparatus of Claim 1, wherein the mapping  
performed by the proxy element operates to add a selected  
one or more of a point to point (PPP) header, an IP  
20 header, and a user datagram protocol (UDP) header to one  
or more frames of the incoming packet.

3. The apparatus of Claim 2, wherein one or more  
fields of the incoming packet may be mapped to one or  
25 more fields of a UDP/IP header.

4. The apparatus of Claim 2, wherein the proxy  
element is operable to remove one or more of the PPP  
header, the IP header, and the UDP header from one or  
30 more of the frames before communicating one or more of  
the frames to a media interface.

5        5.    The apparatus of Claim 1, wherein the FP  
element is an acceleration engine operable to process IP  
communication flows in order to provide a selected one or  
more of routing operations, quality of service  
operations, compression operations, and fast-switching  
operations.

10       6.    The apparatus of Claim 1, wherein the cell site  
element is operable to extract a high-level data link  
control (HDLC) payload from the packet and to perform a  
compression process on the HDLC payload in order to  
reduce a number of bytes associated with the incoming  
packet, the cell site element being further operable to  
15       build a key that maps the HDLC payload associated with  
the packet to the key, the key being broken into segments  
that are positioned into a selected one or more of a  
source internet protocol (IP) address field, a user  
datagram protocol (UDP) source port field, and a UDP  
destination port field of a UDP packet, the UDP packet  
20       being sent to the RP of the cell site element such that  
it may be directed to a next destination.

25       7.    The apparatus of Claim 6, wherein the cell site  
element is operable to construct the UDP packet, and  
wherein remaining fields of the HDLC payload may be  
copied and positioned into a payload field of the UDP  
packet.

8. The apparatus of Claim 6, further comprising:  
an aggregation node associated with a base station  
controller and operable to receive a point to point  
protocol (PPP) over HDLC packet that corresponds to the  
5 UDP packet from the cell site element.

9. The apparatus of Claim 1, wherein the FP  
processes the IP compatible packet and then returns it to  
the RP such that it may be communicated over an outgoing  
10 interface to a next destination.

10. A method for compressing data, comprising:  
receiving a communications flow communicated by a  
mobile station;

5 communicating with a proxy element in order to  
determine if an incoming packet is associated with an  
internet protocol (IP); and

performing a mapping between a non-IP based protocol  
associated with the incoming packet and an IP protocol in  
cases where the incoming packet is non-IP based in order  
10 to generate an IP compatible packet to be processed by a  
forwarding path element and communicated to a next  
destination.

11. The method of Claim 10, wherein the mapping  
15 performed operates to add a selected one or more of a  
point to point (PPP) header, an IP header, and a user  
datagram protocol (UDP) header to one or more frames of  
the incoming packet.

20 12. The method of Claim 11, wherein one or more  
fields of the incoming packet may be mapped to one or  
more fields of a UDP/IP header.

13. The method of Claim 11, further comprising:  
25 removing one or more of the PPP header, the IP  
header, and the UDP header from one or more of the frames  
before communicating one or more of the frames to a media  
interface.

14. The method of Claim 11, wherein the FP element  
is an acceleration engine operable to process IP  
communication flows in order to provide a selected one or  
5 more of routing operations, quality of service  
operations, compression operations, and fast-switching  
operations.

15. The method of Claim 10, further comprising:  
10 receiving a point to point protocol (PPP) over HDLC  
packet that corresponds to a UDP packet associated with  
the incoming packet.

16. The method of Claim 10, further comprising:  
15 processing the IP compatible packet; and  
returning the IP compatible packet to a route  
processor (RP) such that it may be communicated over an  
outgoing interface to a next destination.

17. A system for compressing data, comprising:  
means for receiving a communications flow  
communicated by a mobile station;

5 means for communicating with a proxy element in  
order to determine if an incoming packet is associated  
with an internet protocol (IP); and

10 means for performing a mapping between a non-IP  
based protocol associated with the incoming packet and an  
IP protocol in cases where the incoming packet is non-IP  
based in order to generate an IP compatible packet to be  
processed by a forwarding path element and communicated  
to a next destination.

15 18. The system of Claim 17, wherein the mapping  
performed operates to add a selected one or more of a  
point to point (PPP) header, an IP header, and a user  
datagram protocol (UDP) header to one or more frames of  
the incoming packet.

20 19. The system of Claim 18, wherein one or more  
fields of the incoming packet may be mapped to one or  
more fields of a UDP/IP header.

25 20. The system of Claim 18, further comprising:  
means for removing one or more of the PPP header,  
the IP header, and the UDP header from one or more of the  
frames before communicating one or more of the frames to  
a media interface.

21. The system of Claim 18, further comprising:  
means for receiving a point to point protocol (PPP)  
over HDLC packet that corresponds to a UDP packet  
5 associated with the incoming packet.

22. The system of Claim 18, further comprising:  
means for processing the IP compatible packet; and  
means for returning the IP compatible packet to a  
10 route processor (RP) such that it may be communicated  
over an outgoing interface to a next destination.

23. Software for compressing data, the software being embodied in a computer readable medium and comprising code such that when executed is operable to:

5 receive a communications flow communicated by a mobile station;

communicate with a proxy element in order to determine if an incoming packet is associated with an internet protocol (IP); and

10 perform a mapping between a non-IP based protocol associated with the incoming packet and an IP protocol in cases where the incoming packet is non-IP based in order to generate an IP compatible packet to be processed by a forwarding path element and communicated to a next destination.

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24. The medium of Claim 23, wherein the mapping performed operates to add a selected one or more of a point to point (PPP) header, an IP header, and a user datagram protocol (UDP) header to one or more frames of  
20 the incoming packet.

25. The medium of Claim 24, wherein one or more fields of the incoming packet may be mapped to one or more fields of a UDP/IP header.

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26. The medium of Claim 24, wherein the code is further operable to:

30 remove one or more of the PPP header, the IP header, and the UDP header from one or more of the frames before communicating one or more of the frames to a media interface.



27. The medium of Claim 24, wherein the code is further operable to:

5 receive a point to point protocol (PPP) over HDLC packet that corresponds to a UDP packet associated with the incoming packet.

28. The medium of Claim 24, wherein the code is further operable to:

10 process the IP compatible packet; and  
return the IP compatible packet to a route processor (RP) such that it may be communicated over an outgoing interface to a next destination.